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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/800,553

03/15/2004

Ting He

3994994-149832

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05/16/2007

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EXAMINER

EGGERDING, MATTHEW THOMAS

ART UNIT

PAPER NUMBER

1763

MAIL DATE

DELIVERY MODE

05/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/800,553	Applicant(s) HE ET AL.	
	Examiner Matthew Eggerding	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to because solid black shading areas are not permitted. See 37 CFR 1.84(m). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "PVD plasma source" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by US Application No. 2005/0035002 to Wang et al. ("Wang").

For claim 1, Wang teaches a holder for maintaining substrates in an array comprising: a block assembly comprising a face plate, middle plate and retainer plate attached in sequence and aligned in an axis in which a plurality of cylindrical substrates are maintained in cylindrical chambers formed in an array with respect to the face surface of the block assembly and in which the substrates are positioned within the chambers by a spring mechanism during the processing of the substrates, and removable therefrom after the completion of processing. (Fig. 8A-8B, 13-16; para. [0071]-[0075]).

Regarding claim 2, Wang discloses a programmable x-y table in a PVD process in a relationship in which the focus of the PVD plasma source and the surfaces of the substrates maintained in the holder are in approximately the same plane. (para. [0080]-[0081], [0086]).

Regarding claim 3, Wang teaches the substrates are arranged in columns and rows in a matrix in the block assembly. (Fig. 13-16).

For claim 4, Wang teaches the relationship of the number of substrates in the rows to the number of substrates (N) in the columns is $rows_N = columns_N$. (Fig. 13-16).

For claim 5, Wang teaches the relationship of the number of substrates in one column to of the number of substrates in an adjacent column is substrates in $column_N = N$ and substrates in $column_{N+1} = N+1$. (Fig. 13-16).

For claim 6, Wang teaches the relationship of the number of substrates in one row to of the number of substrates in an adjacent row is substrates in $row_N = N$ and areas in $row_{N-1} = N-1$. (Fig. 13-16).

Regarding claim 7, Wang discloses the substrates are arranged in an array in which the location of each substrate in the array is capable of being positioned with respect to a defined point by a programmable x-y table. (para. [0080]-[0081], [0086]).

Regarding claim 8, Wang teaches a block including a multiplicity of substrates comprising longitudinally extending cylindrical electrodes maintained in an array of cylindrical columns in the block. (Fig. 8A-8B, 13-16; para. [071]-[0075]).

For claim 9, Wang teaches the upper surface of the electrode is inset within the block such that the transverse cross-section area of an opening in the upper surface of

the column in the block in which the electrode is positioned is less than the transverse cross-section area of the upper surface of the electrode. (para. [0064]).

For claim 10, Wang teaches a mask is positioned within a column in the block adjacent the upper surface of the electrode maintained in the column. (Fig. 7A-7B; para. [0056]-[0057]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of US Patent No. 2,620,061 to Uxa ("Uxa").

For claim 11, Wang teaches a retainer and spring positioned within a column containing an electrode. (Fig. 8B).

However, Wang does not teach the retainer and spring positioned between the lower surface of the substrate maintained in the column and the retainer plate.

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Uxa teaches a retainer and spring positioned between the lower surface of the substrates maintained in the column and the retainer plate. (Fig. 1, 2).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to utilize the spring and retainer positioning of Uxa with the holder of Wang.

The suggestion/motivation would have been to urge the substrate to the top of the column by use of a spring-loaded retainer. (Uxa, col. 2, line 7 – col. 3, line2). Wang teaches that the retainer plate retains some tension so that there are no gaps between the back surface of the face plate and the mating front surface of the electrode. (Wang, para. [0078]). A spring and retainer optimize the contact between the face plate and the electrode by providing additional tension.

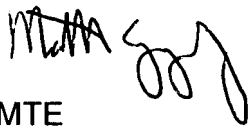
Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew Eggerding whose telephone number is (571) 272-8012. The examiner can normally be reached on Monday-Friday, 8:30 AM-5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


MTE


RAM N. KACKAR, P.E.
PRIMARY EXAMINER